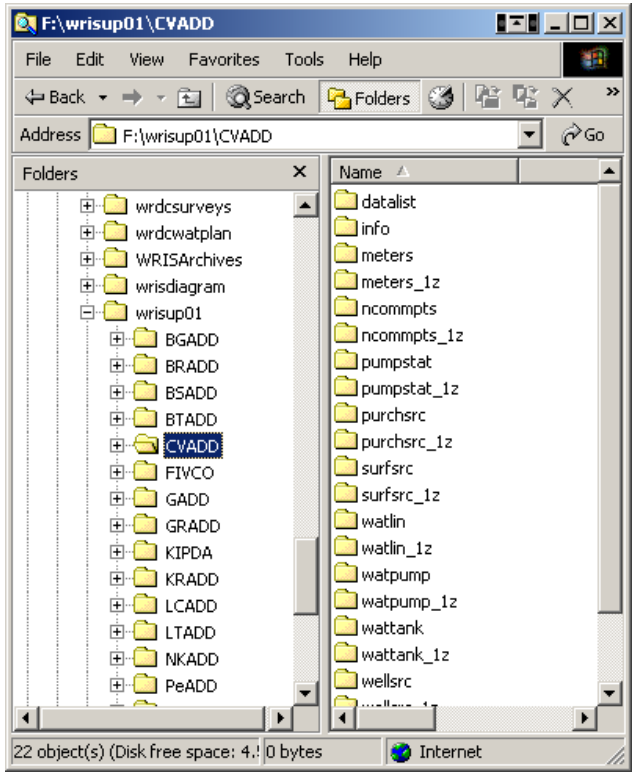
Kentucky's
Water Resource Information System

Water Resource Information System

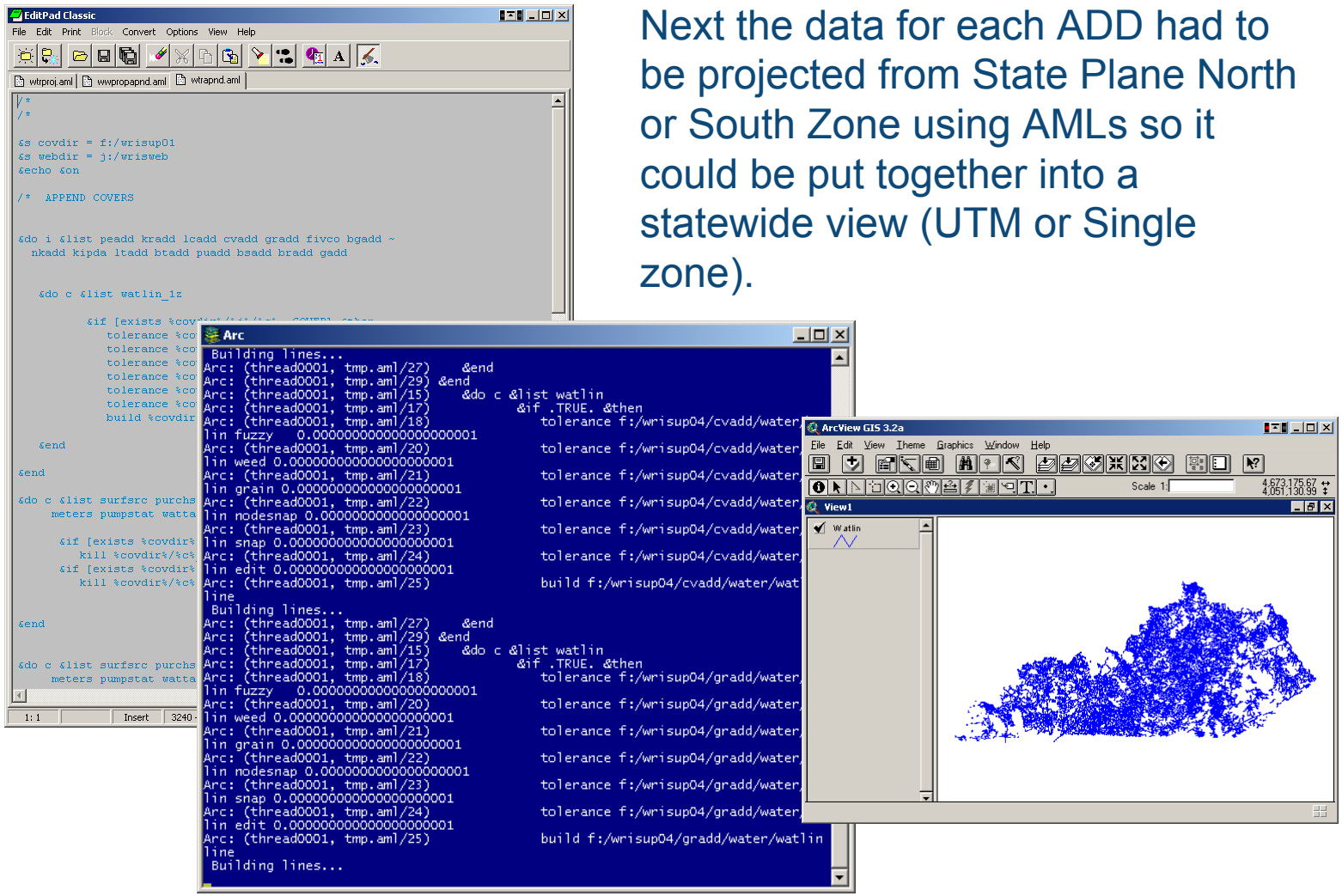
Disconnected Editing in the GeoDatabase

The way it was . . . In the old days!



Data was collected by the ADDs and input in State Plane North or South Zone. The data was stored as Arc/Info Coverage files and uploaded by the ADDs as .e00 files (Arc/Info export files). Each file was imported by WRIS staff into 15 separate directories (one for each ADD).

The way it was . . . In the old days!

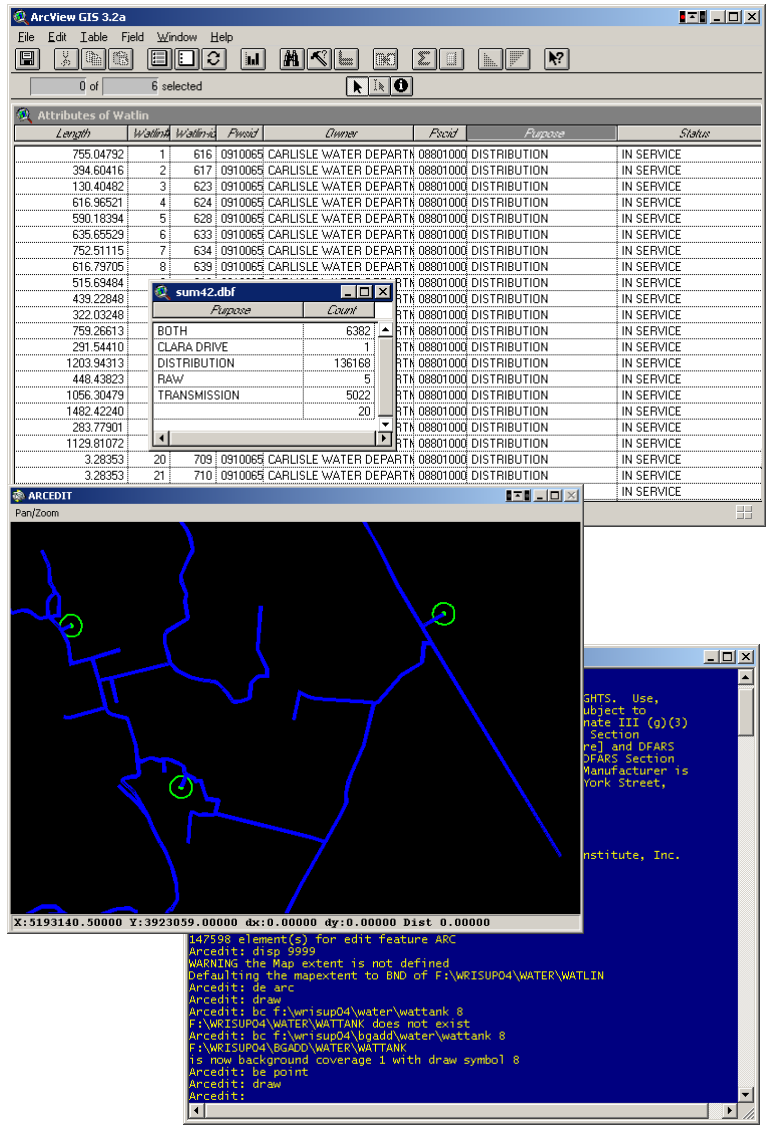


Next the data for each ADD had to be projected from State Plane North or South Zone using AMLs so it could be put together into a statewide view (UTM or Single zone).

The way it was . . . In the old days!

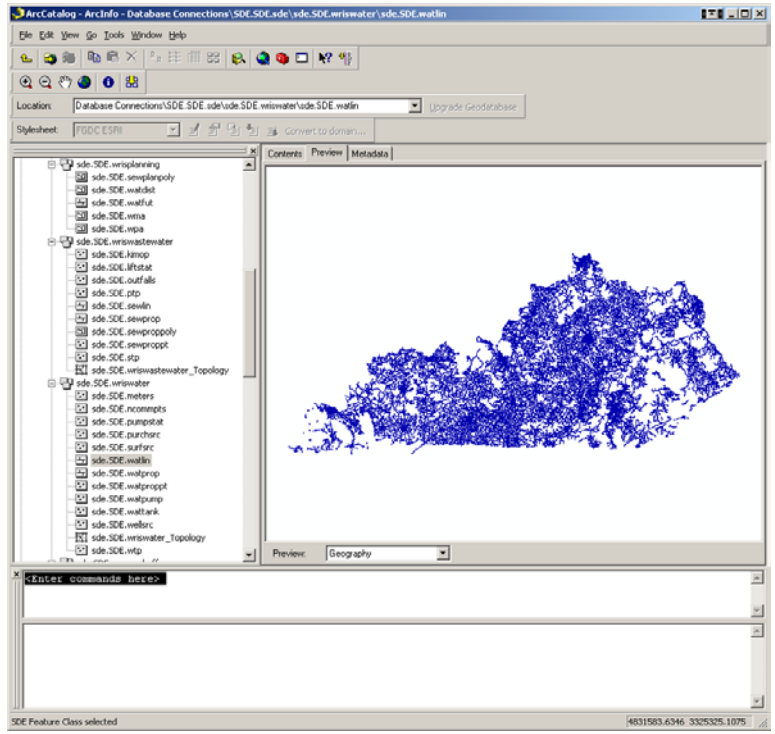
Although there were standards and domains for each field, QA/QC was a very manual process because there was no way to enforce that the correct values were input. The values in each field had to be checked to ensure they followed the domains.

The topological relationship between features also had to be checked to ensure that the data reflected reality. For example, each water tank should be “snapped” to a waterline.



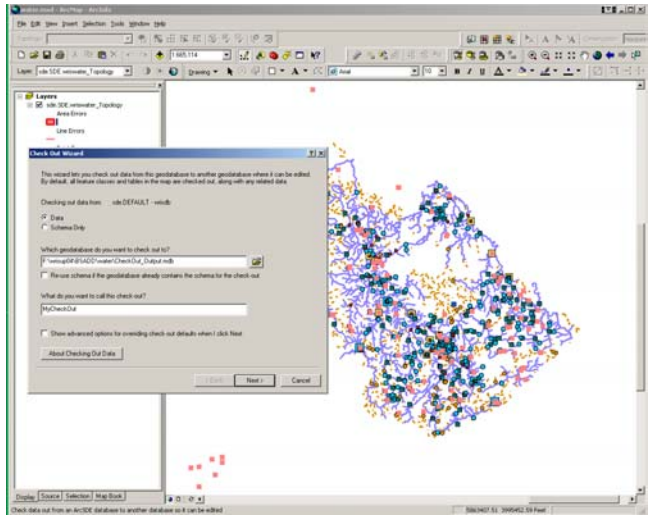
The way it's done now!

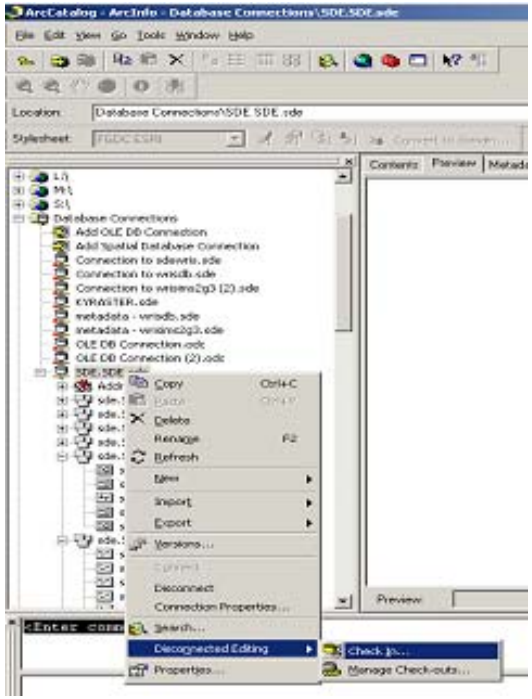
Data is stored in feature datasets residing in SDE. The data is input and stored in the State Plane Single Zone. The data in SDE covers the entire state (not separated by ADD).



The way it's done now!

The data is checked out by ADD using the disconnected editing toolbar. The data for each ADD checks out to a personal geodatabase. We use the attribute ADDNAME to check the data out for each.

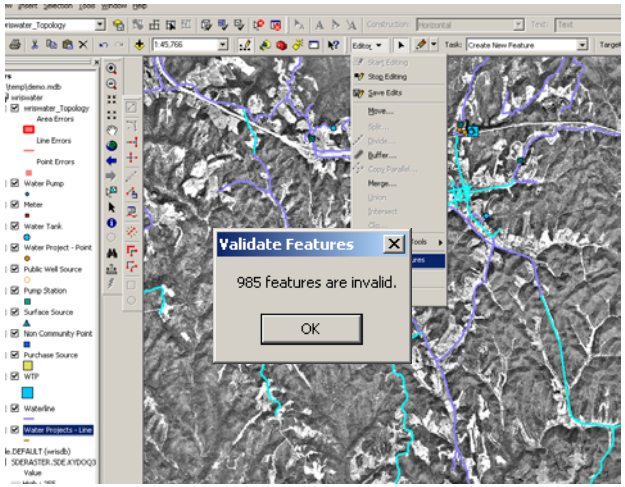




Instead of checking in ALL the data for each ADD, only those changes that have been made are checked back into the SDE geodatabase. The ADDs upload a delta geodatabase (only has what has changed) which is checked back in using ArcCatalog.

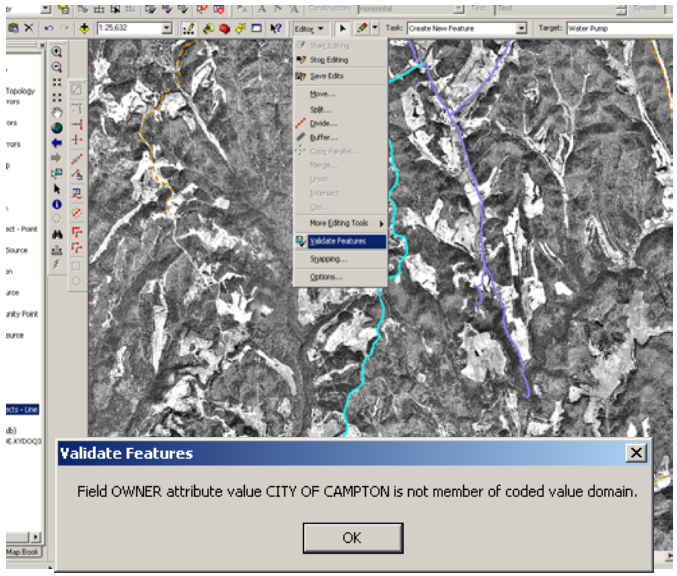
The way it's done now!

Since domains and ranges have been applied to the geodatabase, it is easy to validate the attributes to ensure the values adhere to the standards. QA/QC is much easier since you can quickly assess how many features violate the rules.



In ArcMap, you can select many features and see how many have invalid attributes.

Or you can select one feature that is invalid and determine how it is "breaking the rules"



The way it's done now!

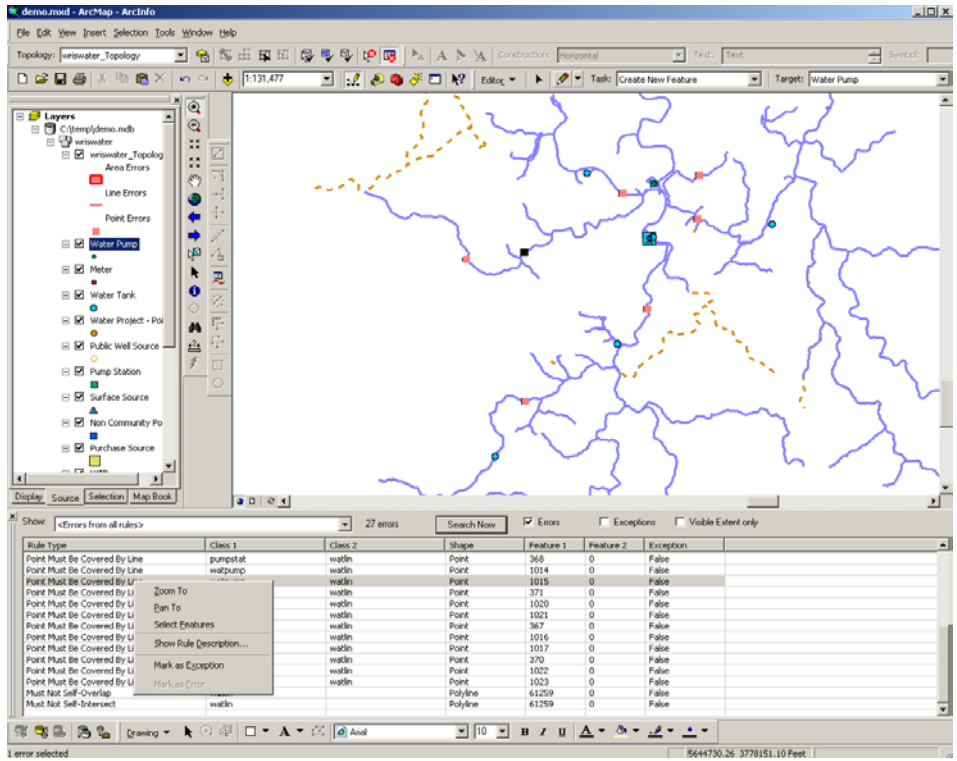
Topology in the geodatabase is enforced based on the rules you set. The geodatabase allows topology to exist between different feature classes in a feature dataset. For example, you can set a rule to enforce that every water tank should be snapped to the end of a waterline.

Some of the rules we set in the water geodatabase are:

- Meters-point must be covered by waterline
- Pump station-point must be covered by waterline
- Purchase source-point must be covered by waterline
- Surface source-point must be covered by endpoint of waterline
- Well source-point must be covered by endpoint of waterline
- Waterline-must not self-overlap
- Waterline-must not self-intersect

The way it's done now!

Topology errors can be symbolized in ArcMap. The error inspector can be used to get a list of all topology errors, zoom or pan to an error to fix it. The error inspector shows you the rule that features are violating. You can also mark an error as an exception.



The way it's done now!

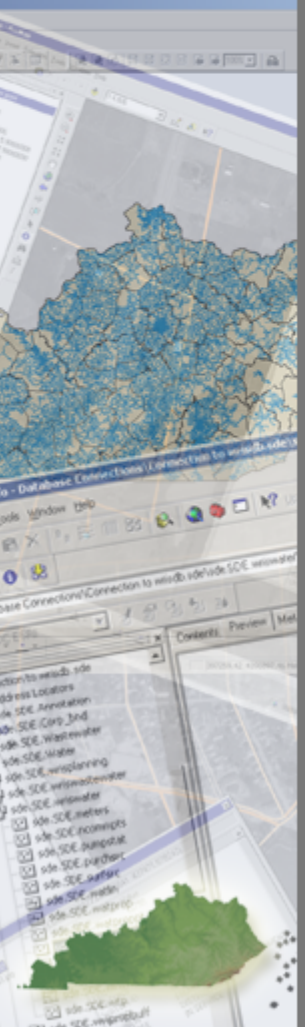
Data in SDE is leveraged for many applications:

Used in ArcGIS for mapping and analysis

Data is served on the internet through ArcIMS

Linked to in-house project database

Tied to nonspatial information



Disconnected Editing Demonstration

Disconnected Editing in the GeoDatabase

Why use the GeoDatabase?

Constrain attributes using domains and ranges

Create topology to model how features should relate to each other

With a geodatabase you can use the validation tools (for attributes and topology) to easily find & fix errors.

Data in an SDE geodatabase can be leveraged by your RDBMS or vice versa

Things to consider

What coordinate system will the data be stored in?

Do you want to group the data into 1 or several feature datasets?

Do you have domains and ranges you want to use?

Do you want to apply topology to 1 or more feature classes?

How do you want to check out the data (the entire dataset, by XY extent, by attribute)?

Requirements

SDE 8.3 or higher

SDE compatible RDBMS

ArcGIS or ArcEditor 8.3 or higher

Water Resource Information System

375 Versailles Road
Frankfort, Kentucky 40601
502-573-0260

http://wris.ky.gov/wris/
kimberly.anness@ky.gov

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